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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,754	09/18/2003	Yufeng Li	2002P15652US01	4113

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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

TERMANINI, SAMIR

ART UNIT	PAPER NUMBER
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2178

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/664,754	Applicant(s) LI, YUFENG	
	Examiner Samir Termanini	Art Unit 2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>N/A</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

BACKGROUND

1. This action is responsive to the following communications: RCE filed on 3/36/2007.
2. Claims 1-20 are pending in this case. Claims 1, 19, and 20 are in independent form. Claims 1-2, 4-7, 9, 19, and 20 have been amended.
3. The examiners rejections of claims 1-20 under 35 USC § 102(b) as being anticipated by *Arora et al.* in the previous final office (dated 12/29/2006) have been withdrawn in view of Applicant's amendment, as specifically addressed in paragraphs 8 and 9 of this Office Action.

CLAIM REJECTIONS - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by *Engdahl* (U.S. Pat. No. 6,282,455).

As to independent claim 1, *Engdahl* describe(s): A method for representing HMI user screens comprising the activities of: via an information device ("...a computer...", col. 2, lines 31-33): obtaining an organization and a hierarchy of a collection ("...Collecting objects...", col. 2, line 67 – col. 3, line 1) comprising a plurality of human machine interface (HMI) screen nodes ("...a graphic representation of a scene graph employed by the present invention to track the hierarchy and association of different spatially linked objects the latter represented by nodes...", col. 3, lines 43-46), each of the plurality of HMI screen nodes a visual representation of a corresponding visual display of a human machine interface ("...viewing the visual display...", col. 2, lines 40-44) adapted to interpret communications from a human operator of an automated machine controller ("...for designing, programming, control and maintenance of factory processes..." col. 4, line 67 – col. 5, line 1); automatically determining an arrangement of the collection ("established automatically" col. 8, line 46); responsive to a detected collision between a parent node of said hierarchy of said collection and a leaf node of the parent node ("...is on top of another object..." col. 8, lines 25-26), automatically adjusting a position of said parent node ("...parent node connects to the child node's properties...", col. 8, lines 29-30); and rendering the collection according to the arrangement ("...rendering the scene...", col. 3, line 49).

As to dependent claim 2, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising calculating a position of the leaf node ("...each nodes spatial coordinates are defined relative to its parent node and hence children nodes "move" with the parent node when the coordinates of the parent

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node are changed. Generally the coordinates include x, y and z Cartesian coordinates as well as rotative coordinates of roll, yaw, and pitch. This allows visual objects, represented by children nodes, to be placed "withthin" other visual objects represented by parent nodes....," col. 5, lines 32-33).

As to dependent claim 3, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising calculating a position of a visible leaf ("...coordinates includ[ing] x, y and z Cartesian coordinates [of] visual objects, represented by children nodes," col. 5, lines 37-39)(emphasis added).

As to dependent claim 4, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising calculating the position of the parent ("...coordinates [of] parent node..." col. 5, lines 32-33).

As to dependent claim 5, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising detecting the collision ("...if the culmination of the drag-drop operation is that the selected object 64 is on top of another object 64, then the objects 64 of the child node takes its arguments from the parent node's properties and, if necessary, the parent node connects to the child node's properties.," col. 8, lines 25-30)(emphasis added).

As to dependent claim 6, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising updating the position of the parent ("...the parent node connects to the child node's properties..." col. 8, lines 29-30).

As to dependent claim 7, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising updating the position of the parent ("...the parent node connects to the child node's properties...automatically...", col. 8, lines 25-30 and 46) upon detecting the collision ("if... the drag-drop operation is that the selected object 64 is on top of another object...the parent node connects to the child node's properties...automatically...", col. 8, lines 25-30 and 46).

As to dependent claim 8, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising recursively calculating a position of each of the plurality of HMI screen nodes ("...respond to the operation of the computer node, again through a linking of properties...", col. 6 lines 24-27)(emphasis added).

As to dependent claim 9, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising recursively calculating a position of each of the plurality of HMI screen nodes ("...respond to the operation of the computer node, again through a linking of properties...", col. 6 lines 24-27)(emphasis added) and updating the position of the parent upon detecting the collision ("if... the drag-drop operation is that the selected object 64 is on top of another object...the parent node connects to the child node's properties...automatically...", col. 8, lines 25-30 and 46).

As to dependent claims 10 and 11, which depend from claim 1, *Engdahl* further disclose(s): the method of claim 1 further comprising changing a visibility of a node and children of the node ("visibility of a particular object 64 may be changed through the

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node editor 78 receiving cursor commands from the devices 24 " col. 7, lines 39-47; see also, "...each node includes the property of visibility and thus its associated object may become invisible or transparent allowing this nesting of objects in other objects to be properly displayed on the visual display 22 and the display to be simplified when all components to nodes need not be displayed....," col. 6, lines 40-45)(emphasis added).

As to dependent claim 12, which depends from claim 1, *Engdahl* further disclose(s): the method of claim 1 wherein the arrangement is a tree arrangement ("...in which scene elements are arranged as nodes on a tree structure...", col. 5, lines 25-27)(emphasis added).

As to independent claim 19, this claim differs from claim 1 only in that it is directed to a product defined by the process of claim 1. Accordingly, this claim is rejected for the same reasons set forth in the treatment of claim 1, above.

As to independent claim 20, this claim differs from claim 1 only in that it is directed to an apparatus for carrying out the process of claim 1. *Engdahl* further disclose(s):

[A]n industrial control system [a] central control unit [i]ncluding a central processing unit [a] communications adapter [a] terminal 20 providing a visual display 22 and one or more user input devices [i]nput device 24 may be a conventional keyboard and mouse, or a spaceball...a common network [and] one or more remote units (col. 3, line 57 to col. 4, line 26).

Accordingly, this claim is rejected for the same reasons set forth in the treatment of claim 1, above.

CLAIM REJECTIONS - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13–18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Engdahl* (U.S. Pat. No. 6,282,455) in view of *Chapman et al.* (U.S. Pre-Grant Publication 2004/0021679) and *Arora et al.* (US Pat. No. 5,911,145).

As to dependent claims 13 and 14, which depend from claim 1, *Engdahl* taught the method for representing HMI user screens in an information device ("...a computer...", col. 2, lines 31-33; see also discussion of claim 20, above), obtaining the organization and a hierarchy of a collection ("...Collecting objects...", col. 2, line 67 – col. 3, line 1), the plurality of human machine interface (HMI) screen nodes ("...a graphic representation of a scene graph employed by the present invention to track the hierarchy and association of different spatially linked objects the latter represented by nodes...", col. 3, lines 43-46), each of the plurality of HMI screen nodes a visual representation of the corresponding visual display of a human machine interface ("...viewing the visual display...", col. 2, lines 40-44) adapted to interpret communications from the human operator of the automated machine controller ("...for

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designing, programming, control and maintenance of factory processes..." col. 4, line 67 – col. 5, line 1); automatically determining an arrangement of the collection (e.g. "established automatically" col. 8, line 46), being responsive to a detected collision between the parent node of said hierarchy of said collection and the leaf node of the parent node ("...is on top of another object..." col. 8, lines 25-26), automatically adjusting a position of said parent node ("...parent node connects to the child node's properties..." col. 8, lines 29-30); and rendering the collection according to the arrangement ("...rendering the scene..." col. 3, line 49).

Engdahl arguably fails to clearly show that the arrangement is either: (1) a vertical tree arrangement; or (2) a horizontal tree arrangement.

Arora et al. is cited for teaching an arrangement of a vertical tree, as illustrated in figure 21 *id.*

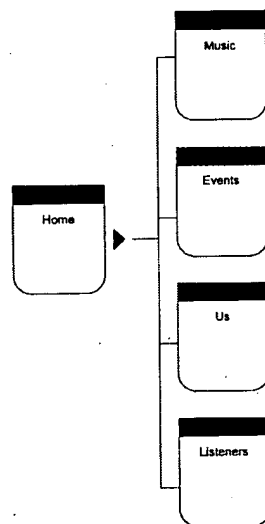


FIG. 21

United States Patent
Arora et al
Patent No. 5,911,145

Arora et al. further teaches a horizontal tree arrangement, as illustrated in figure 20 *id.*

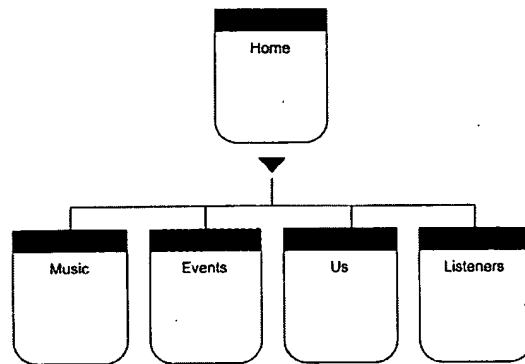


FIG. 20

United States Patent
Arora et al
Patent No. 5,911,145

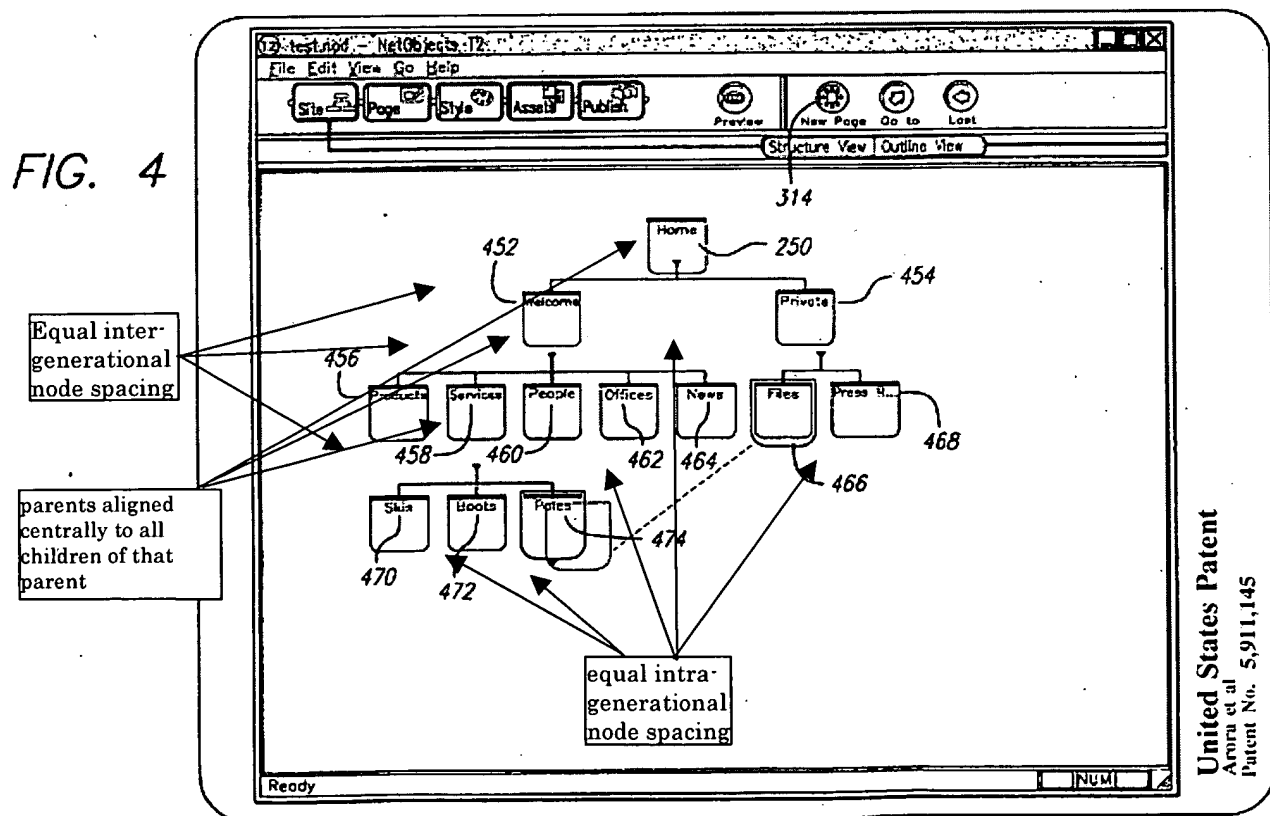
Arora et al. does not teach the vertical and horizontal tree arrangements for configuring an HMI. Instead, the vertical and horizontal tree arrangements are for HTML pages of a web site.

Chapman et al. teaches "a human machine interface (HMI)" (para. [0001]) including "a display page including a plurality of display page elements" (para. [0025]) where "[p]referably, the display page is HTML based" (para. [0040]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to have combined the vertical and horizontal tree arrangements of *Arora et al.* with the HMI editor of *Engdahl* because of the teachings in *Chapman et al.* and knowledge of persons of ordinary skill in the art. More specifically, *Chapman et al.*

suggests the use of HTML display pages for "[b]etter integration between the operator HMI and other business systems. Business systems are undoubtedly moving towards greater integration with the web," para. [0226]). The level of ordinary skill coupled with the level of knowledge in the art at the time of the invention (evidenced in these three references) was such that their existed a reasonable expectation of success in the above combination (e.g. "In addition, the latest version of MSHTML includes many new features that are pivotal in making it suitable as a basis for an industrial HMI architecture...," para. [0240]). Additionally, *Engdahl*, *Chapman et al.*, and *Arora et al.* are in analogous art as they all are directed to the same field of endeavor of configuring user interfaces using markup languages.

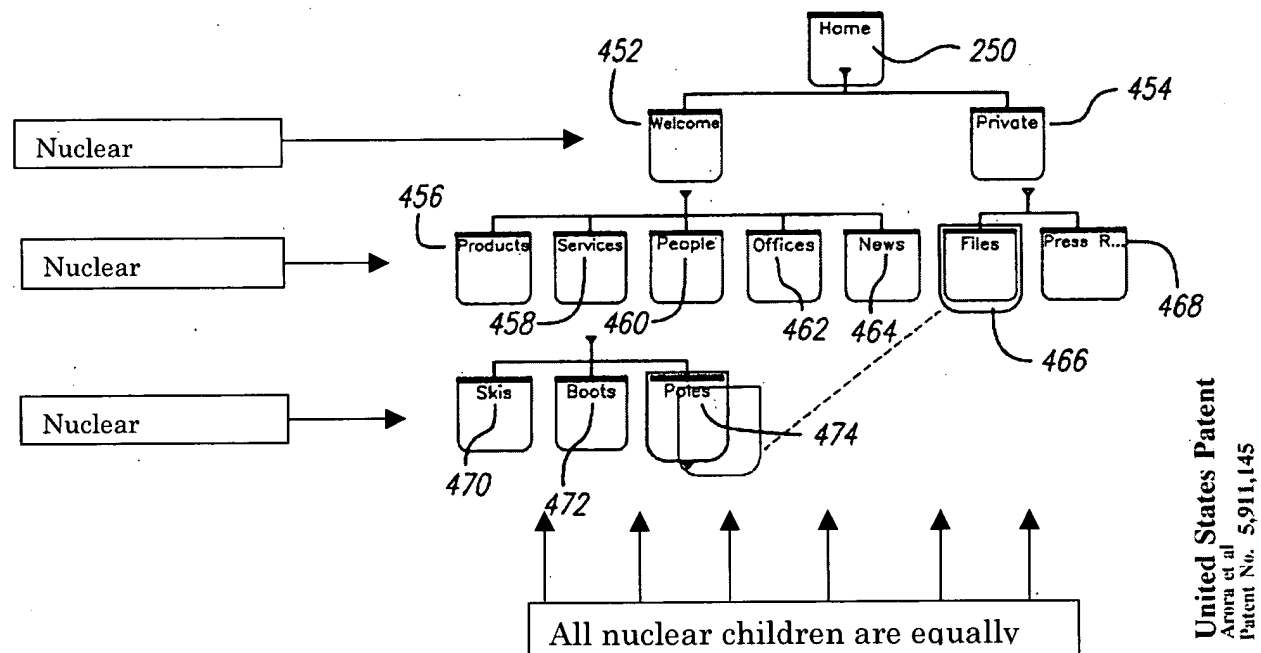
As to dependent claims 15-17, *Arora et al.* further disclosed the method of claim 1, wherein the arrangement is rendered with equal inter-generational node spacing,



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equal intra-generational node spacing, and each parent aligned centrally to all children of that parent - as illustrated in figure 4.

As to dependent claim 18, *Arora et al.* further disclosed the method of claim 1, wherein the arrangement is rendered with all nuclear children separated equally, as illustrated in figure 4.



RESPONSE TO ARGUMENTS

8. Applicant's arguments with respect to rejection of claims 1–20, see p. 7 of Applicants RCE (dated 3/26/2007), have been considered but are moot in view of the new grounds of rejection.

9. Applicant's argues persuasively that, with respect to the claims as amended, *Arora et al.* is not directed to a method for editing HMI screen nodes for use by a human operator of an industrial plant to an automated machine controller. Accordingly, the previous rejections under 35 USC §102 are withdrawn.

CONCLUSION

10. Although not relied upon, the following prior art is made of record because it considered pertinent to applicant's disclosure:

Schuur; Adrianus	US 5606654 A	Computer screen and memory organization enabling presentation of a tree.
Sztipanovits; Janos et al.	US 5420977 A	Multiple aspect operator interface for displaying fault diagnostics results in intelligent process control systems.
Havner; Randall A. et al.	US 6854111 B1	Library manager for automated programming of industrial controls..
Tatsumi; Tetsu et al.	US 5432897 A	Method and an apparatus for editing tree structures in display.
McKaskle; Greg et al.	US 5481741 A	Method and apparatus for providing attribute nodes in a graphical data flow environment.
Grau; Stephen H. et al.	US 6067093 A	Method and apparatus for organizing objects of a network map.
Arcuri; Anthony J. et al.	US 5493678 A	Method in a structure editor
Shah Kamran et al.	US 20030101021 A1	Animation of a configuration diagram to visually indicate deployment of programs.
McDonald; Ryan O. et al.	US 6053951 A	Man/machine interface graphical code generation wizard for automatically creating MMI graphical programs.
Odom, Brian Keith et al.	US 20030163298 A1	Reconfigurable measurement system utilizing a programmable hardware element and fixed hardware resources.
Fuller, David W. III et al.	US 20030036876 A1	Network-based system for configuring a measurement system using configuration information generated based on a user specification.
Weber; Patrick et al.	US 7171281 B2	Control system and method therefor
Elsbree; et al.	US 7017116 B2	Graphical human-machine interface on a portable device.
Spriggs, Bob et al.	US 20030023518 A1	Industrial plant asset management system: apparatus and method.

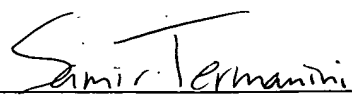
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Spriggs, Bob et al.	US 20030028269 A1	Industrial plant asset management system: apparatus and method.
Bachman, George E. et al.	US 20030217053 A1	Context control mechanism for data executed in workflows of process, factory-floor, environmental, computer aided manufacturing-based or other control system.
Dove; Andrew P. et al.	US 6078320 A	System for configuring a process control environment.
Dove; Andrew P. et al.	US 5838563 A	System for configuring a process control environment.

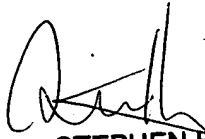
11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samir Termanini whose telephone number is (571) 270-1047. The Examiner can normally be reached from 9 A.M. to 4 P.M., Monday through Friday (excluding alternating Fridays).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Stephen S. Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, *see* <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Samir Termanini
Patent Examiner
Art Unit 2178


STEPHEN HONG
SUPERVISORY PATENT EXAMINER